Oscilloscope Fundamentals

Capturing Your Signal in 3 Easy Steps

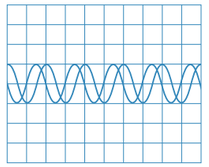
Making Connections

- **Check the attenuation of your probes.** Are they 1x or 10x probes? Make sure the scope input settings match the probes.
- **Check probe compensation.** Connect the probe to the PROBE COMP output on the front of the scope. If you don't see a clean square wave, adjust the probe compensation.
- **Connect the probe ground to a grounded point on your circuit.**
- **Connect the probe tip to the signal you want to measure.**

Avoiding Pitfalls

- **If you don't see a signal**
  - Try using Autoset.
  - Is the channel turned on?
  - Is the waveform off the screen? Try adjusting the vertical position.
  - Is the instrument waiting for a trigger? Does it say Ready? Try forcing a trigger or switch the trigger mode to "Auto".
- **Aliasing.** If the frequency of the input signal seems too low, or if it's difficult to get a stable waveform, try increasing the instrument's sample rate by turning the horizontal scale clockwise.
- **Built-in Help.** The Help button provides context-sensitive answers when all else fails.

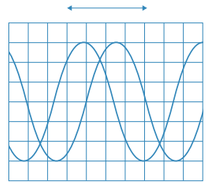
To learn more about oscilloscopes, visit us at:
www.tektronix.com/oscilloscopes



Step 1
Set the Vertical Scale (volts/division)

Larger waveforms give better measurement resolution

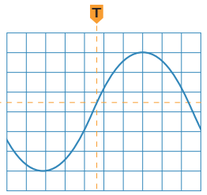
Position	Moves the waveform up and down on the display
Scale	Varies the size of the waveform on the screen
Bandwidth Limit	Blocks frequencies above the limit
Input Coupling	Use DC coupling in most cases. Use AC coupling to see AC signals "riding" on a DC offset



Step 2
Set the Horizontal Scale (seconds/division)

Both channels use the same timescale

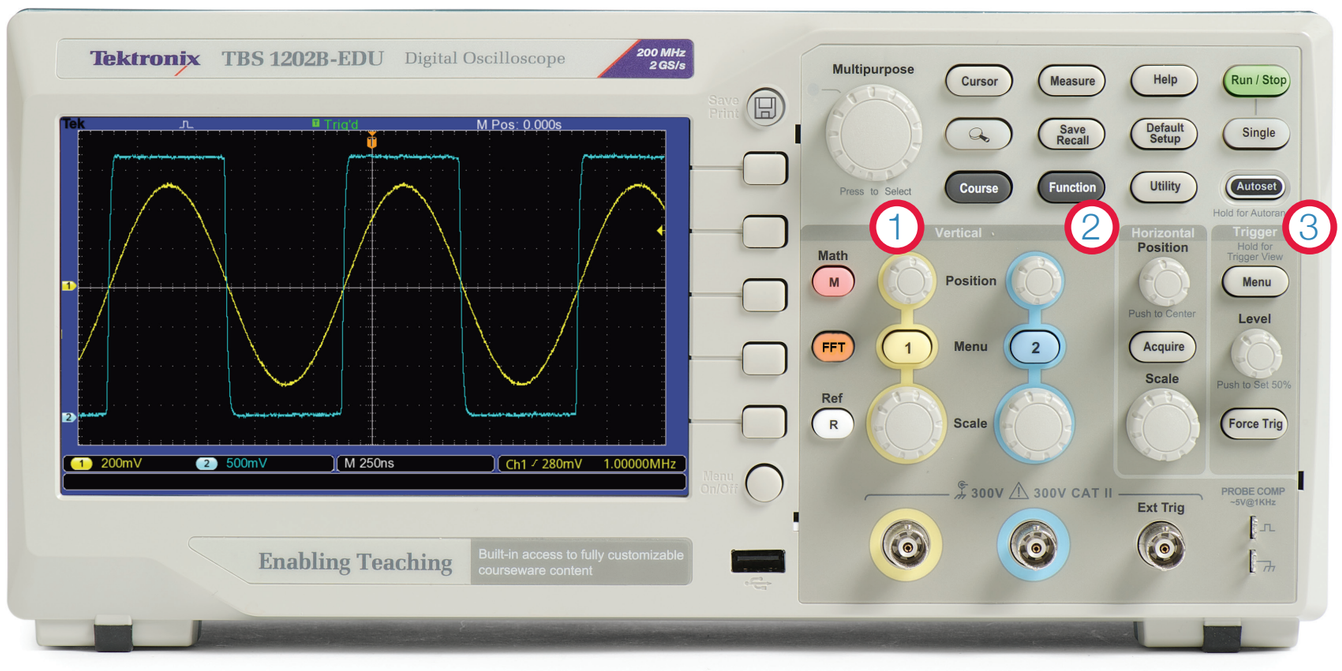
Position	Moves the waveform left and right on the display
Scale	Determines the amount of time displayed



Step 3
Set the Trigger Type, Source and Levels

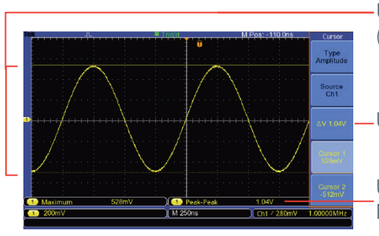
Triggering stabilizes the waveform on the display

Type	Edge triggering is used most often – it captures on a rising or falling edge
Source	Determines which signal is compared to the trigger settings
Level	Determines where on an edge the trigger point occurs
Slope	Determines whether the trigger occurs on the rising or falling edge

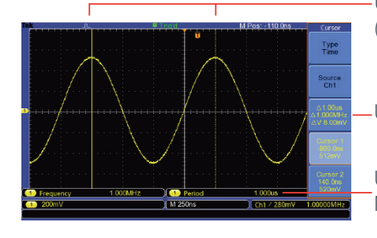


Making Measurements

Voltage



Time



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